PETROLEUM WATCH
California Energy Commission
April 2015

Recent Petroleum News and Outside Analyses

Refining News

- **ExxonMobil Torrance Fire:** On March 11, 2015, ExxonMobil reported a fire at its Torrance refinery. No injuries were reported, but this fire comes after the explosion that occurred on February 16 that has reduced operations at the refinery.
- **Tesoro Golden Eagle Shutdown**: On March 12, 2015, Tesoro confirmed reports that Shell and the United Steel Workers Union have reached agreement on the national issues. With this agreement, the Golden Eagle refinery will likely soon restart operations, as the agreement provides a framework for negotiations.

State and Federal Policy News

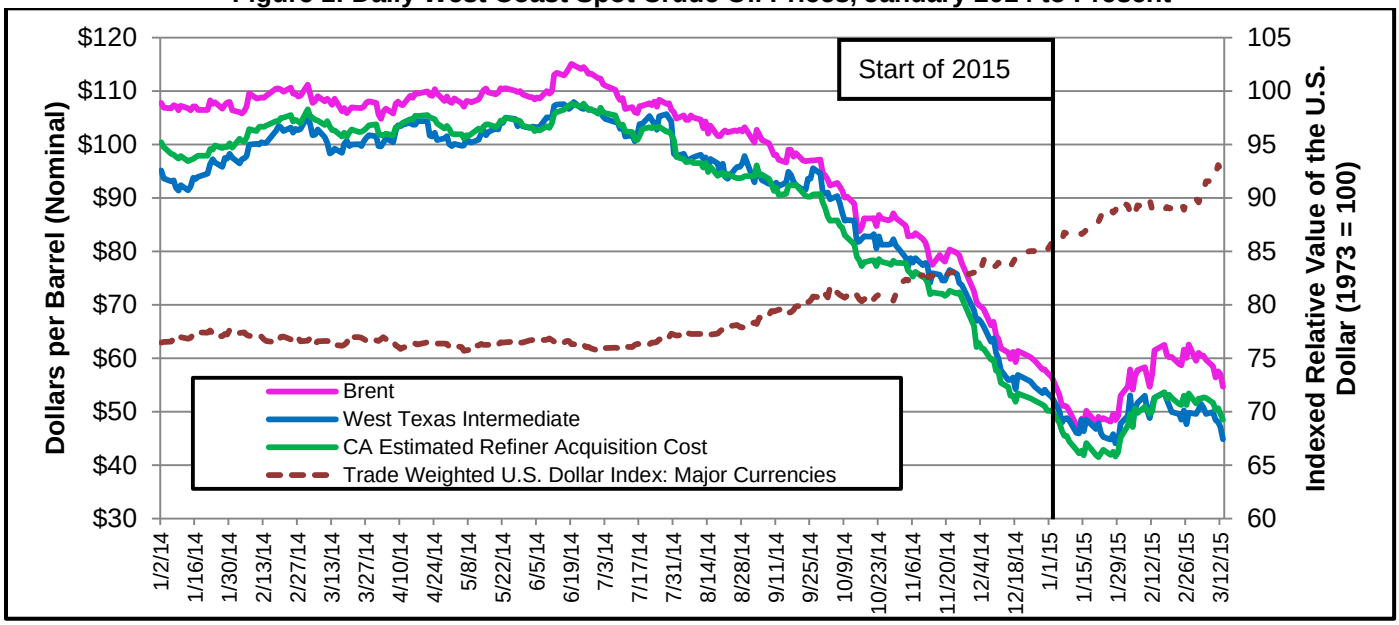
No news to report.

Outside Analysis

- **EIA Analysis:** On March 19, 2015, the U.S. Energy Information Administration (EIA) published an analysis on increased U.S. crude oil production and decreased refinery runs, leading to increased U.S. commercial crude oil storage levels. Increased commercial storage levels are a trend that is also occurring in other Organization for Economic Cooperation and Development countries. http://www.eia.gov/todayinenergy/detail.cfm?id=20432

Crude Oil Prices

Figure 1: Daily West Coast Spot Crude Oil Prices, January 2014 to Present



Source: Energy Information Administration, Oil Price Information Service, and Federal Reserve Bank of St. Louis

Crude oil prices decreased in March, with the California Estimated Refiner Acquisition Cost[1] (CA RAC) of crude oil estimated at $47.45 a barrel on March 16, 2015 (see Figure 1), a decline of 8 percent since the beginning of the month ($51.53 a barrel). Brent and West Texas Intermediate (WTI) oil prices have declined 10 percent ($59.54 to $53.44 a barrel) and 11 percent ($49.59 to $43.93 a barrel), respectively, over the month. The March decline in prices continues a trend that started in mid-February, when prices reached $62.53 a barrel for Brent, $53.56 a barrel for WTI, and $53.67 for CA RAC. While not the lowest crude oil prices in 2015, average March prices are lower than the same time last year: 52 percent lower for WTI, 47 percent lower for Brent, and 51 percent lower for CA RAC.

Crude Oil Prices

March 2014 vs 2015:
(Percent Change)
- **WTI: 52% Lower**
- **Brent: 47% Lower**
- **CA RAC: 51% Lower**

February 2015 Averages:
(Dollars per Barrel)
- **WTI: $50.58**
- **Brent: $58.66**
- **CA RAC: $50.35**

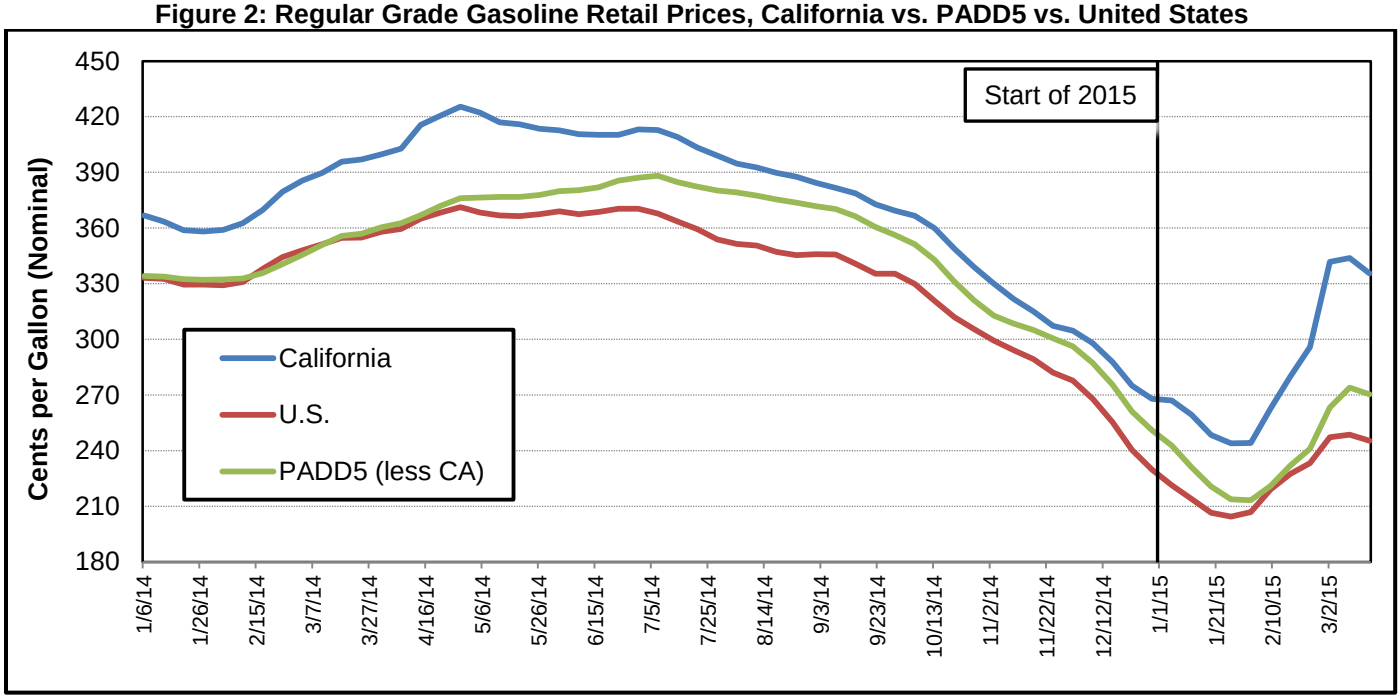
March 16, 2015 Prices:
(Dollars per Barrel)
- **WTI: $43.93**
- **Brent: $53.44**
- **CA RAC: $47.45**

These decreases in crude oil prices have been accompanied by an increase in the relative strength of the U.S. dollar on the international exchange markets (dotted line in Figure 1). Using the FRED[2] index of the U.S. dollar against the major currencies, the average purchasing power of the dollar has increased 5 percent, since February 17. This increase in purchasing power began on the same day crude oil prices began to fall and still continues to inversely match the decreases in prices. From the start of the year, the purchasing power of the dollar has increased 9 percent, helping to lower the price of imports into the U.S. economy while making exports more expensive.

1 California Estimated Refiner Acquisition Cost was created as a proxy to determine the average price of crude oil for California refineries. It is created using California refinery input proportions of California crude, Alaskan crude, and foreign crude, then multiplying those proportion by San Joaquin Valley, Alaskan North Slope, and Brent crude oil prices, respectively.
2 Federal Reserve Bank of St. Louis (FRED).

Gasoline and Diesel Retail Prices and Margins

Figure 2: Regular Grade Gasoline Retail Prices, California vs. PADD5 vs. United States



Source: Energy Information Administration

Unlike crude oil prices, the average price of regular grade gasoline in March increased within California, the United States, and the West Coast[3] (Figure 2). Gasoline prices reached the highest levels this year on the second week of March in all three areas ($3.44 in California, $2.49 in the United States, and $2.74 in West Coast) before decreasing the following week ($3.36, $2.45, and $2.70, respectively). Because of the recent increase in gasoline prices, California average March 2015 prices are 13 percent lower than the average March 2014 prices, a decrease of 13 percentage points when compared to the February 2014-to-2015 month-to-month change (26 percent lower). U.S. gasoline prices are 30 percent lower than March 2014, a 4 percentage point difference from the 2014-to-2015 change (34 percent lower).

Regular Gasoline Prices

March 2014 vs 2015:
(Percent Change)
- **CA: 13% Lower**
- **U.S.: 30% Lower**
- **West Coast: 24% Lower**

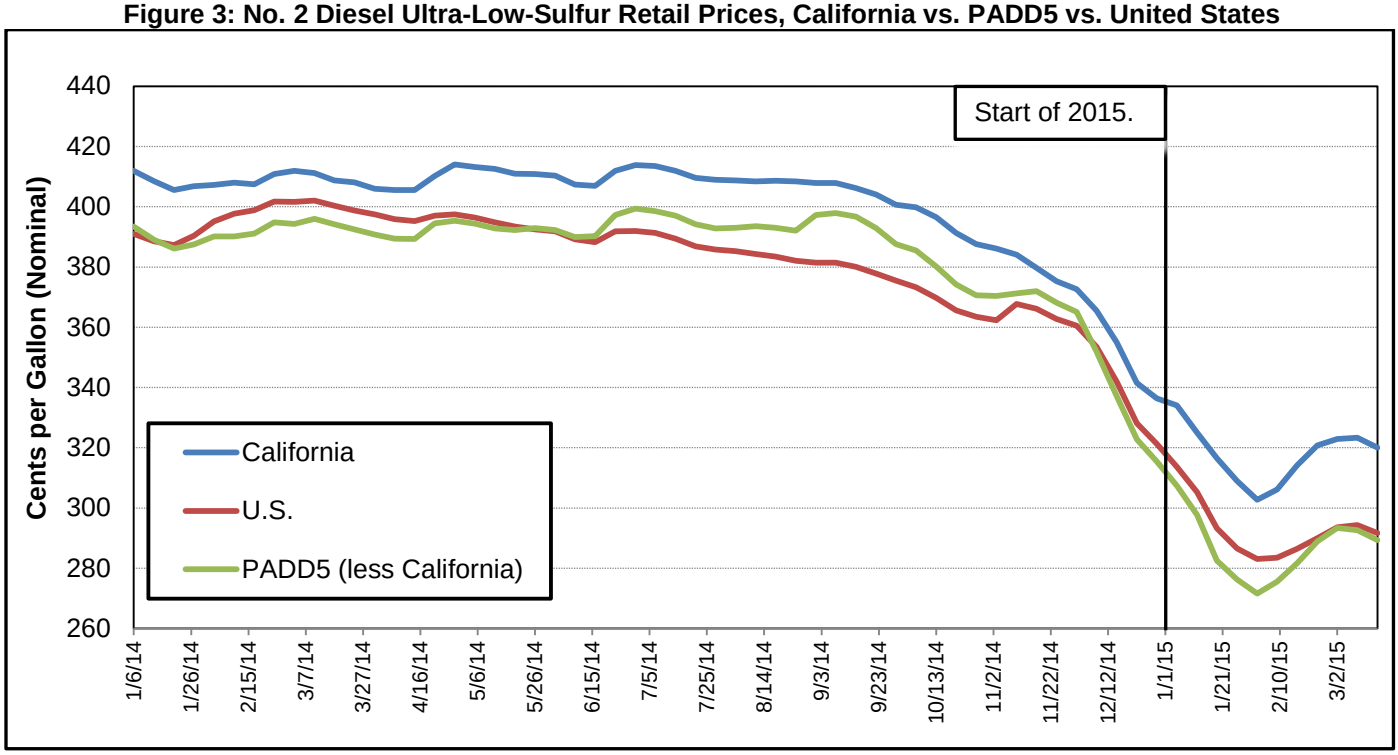
February 2015 Average:
(Dollars per Gallon)
- **CA: $2.71**
- **U.S.: $2.22**
- **West Coast: $2.27**

Week of 3/16/2015:
(Dollars per Gallon)
- **CA: $3.36**
- **U.S.: $2.45**
- **West Coast: $2.70**

With the increases in gasoline prices in March, the year-to-date average difference between California and U.S. retail gasoline prices increased to $0.59, a $0.20 increase over the 2014 average difference ($0.39). The year-to-date California minus the West Coast price difference increased to $0.45 and is $0.20 more than that 2014 average difference ($0.25). The March 2015 California minus U.S. gasoline price differences averaged $0.93, and the California minus West Coast differences averaged $0.71. This is an increase of $0.44 and $0.28 respectively over the February 2015 averages, likely a result of both the Exxon Torrance refinery outage and strike at the Tesoro Golden Eagle refinery.

3 PADD stands for *Petroleum Administration for Defense Districts*. PADD 5 includes the states of Hawaii, Alaska, Washington, Oregon, California, Nevada, and Arizona. West Coast is being defined as all PADD 5 states minus California for this report.

Figure 3: No. 2 Diesel Ultra-Low-Sulfur Retail Prices, California vs. PADD5 vs. United States



Source: Energy Information Administration

Diesel prices for California, the United States, and the West Coast decreased since the beginning of March. In the first week of March, California prices averaged $3.22 a gallon and decreased to an average of $3.20 a gallon by the third week in March (Figure 3). This drop in prices was similar for both the United States and the West Coast, going from $2.94 to $2.92 and from $2.93 to $2.89, respectively. Even though diesel prices have decreased since the beginning of the month, average March prices of diesel are higher than the average February 2015 prices in each of the three areas. This difference was due to a roughly $0.14 increase in prices that occurred from the third week in February to the last week in February in both California and the West Coast. An increase also occurred in the United States but was smaller at $0.07. With the recent increases, diesel prices are 21 percent, 27 percent, and 26 percent lower than March 2014 for California, the United States, and the West Coast, respectively.

Diesel Prices

March 2014 vs 2015:
(Percent Change)

- **CA: 21% Lower**
- **U.S.: 27% Lower**
- **West Coast: 26% Lower**

February 2015 Average:
(Dollars per Gallon)

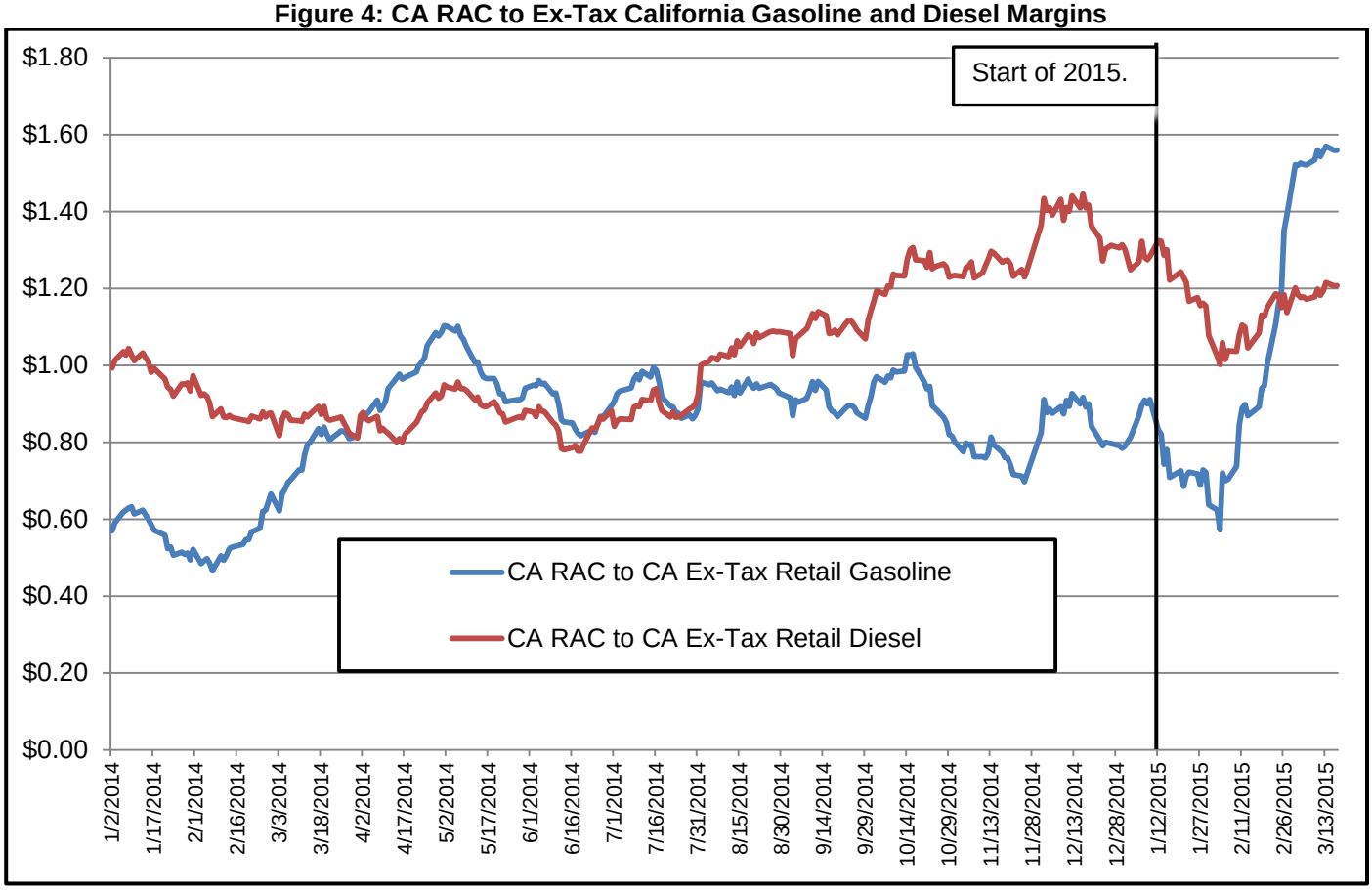
- **CA: $3.11**
- **U.S.: $2.86**
- **West Coast: $2.79**

Week of 3/16/2015:
(Dollars per Gallon)

- **CA: $3.20**
- **U.S.: $2.92**
- **West Coast: $2.89**

The year-to-date average difference between California and United States retail diesel price is $0.25, a $0.07 increase over the 2014 average difference. For California and the West Coast, that difference was $0.31, $0.15 more than that 2014 average difference. The California-to-United States March 2015 average difference was $0.29, which is a $0.20 increase from the March 2014 average difference of $0.09. For California to the West Coast average difference, the March 2015 value of $0.30 is $0.14 more than the same time last year ($0.16).

Figure 4: CA RAC to Ex-Tax California Gasoline and Diesel Margins



Source: Energy Information Administration and Oil Price Information Service

The average March 2015 CA RAC to ex-tax[4] retail regular gasoline (March 1 to March 17) was $1.54 and for retail ex-tax diesel was $1.19 (see Figure 4). These are a $0.62 and a $0.09 increase, respectively, when compared to average February 2015 margins ($0.92 and $1.10, respectively) and have resulted in March 2015 margins being on average 99 percent higher for gasoline and 39 percent higher for diesel than March 2014 averages. The increase in the gasoline margin resulted in gasoline margins being greater than diesel margins for the first time since the 2014 March-to-July time span.

Crude to Ex-Tax Retail Margins

March 2014 vs 2015:
(Percent Change)
- **Gasoline: 99% Higher**
- **Diesel: 39% Higher**

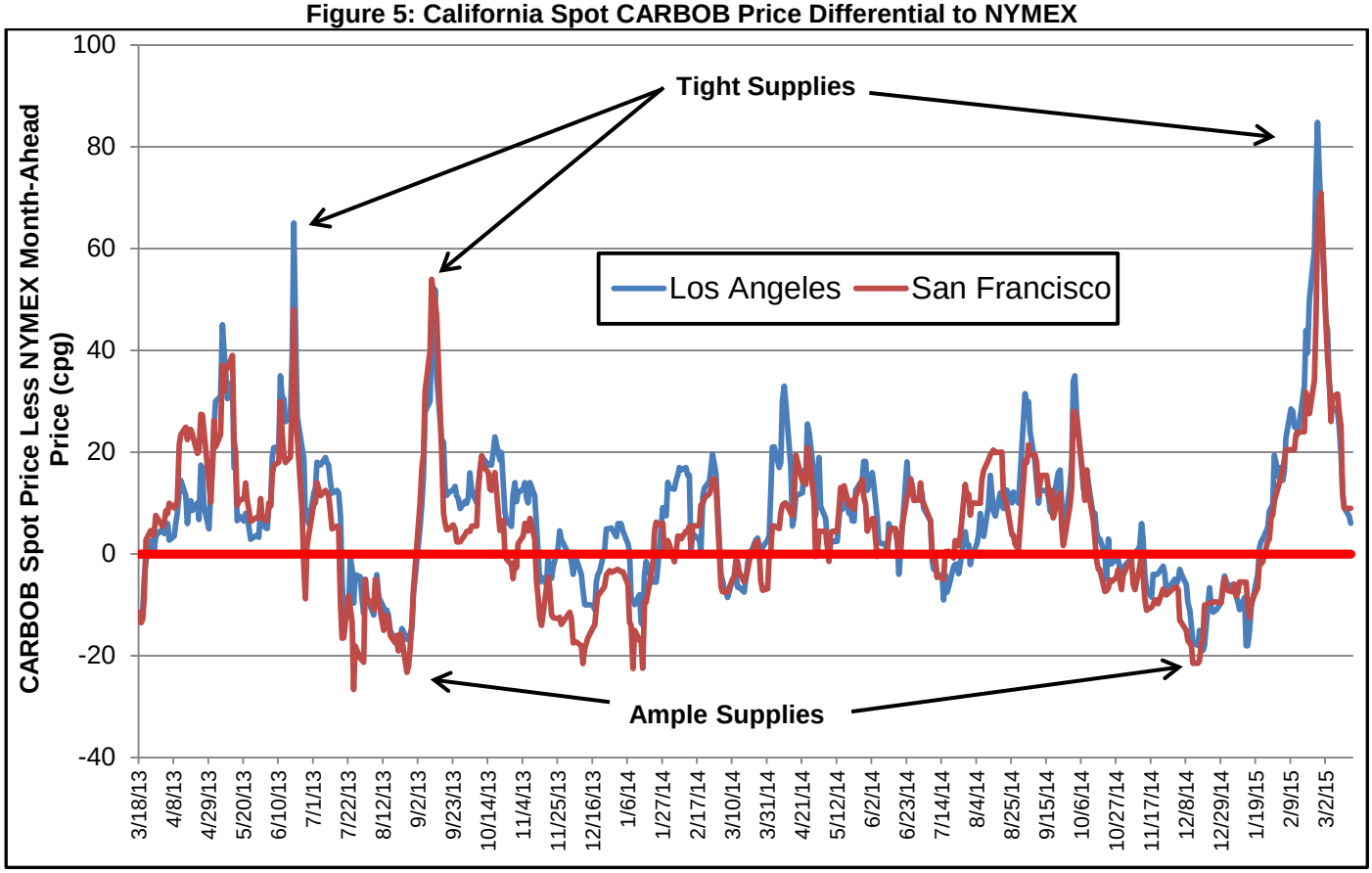
February 2015 Average:
(Dollars per Gallon)
- **Gasoline: $0.92**
- **Diesel: $1.10**

March 17, 2015 Margin:
(Dollars per Gallon)
- **Gasoline: $1.56**
- **Diesel: $1.21**

This large increase in the gasoline margin is a result of a supply tightening in the California gasoline market, caused by the ExxonMobil Torrance refinery explosion in February and the continued strike at the Tesoro Golden Eagle refinery. March is also the beginning of the switch to summer-blend gasoline for California. This change in evaporative properties for gasoline signals a price increase as more expensive components for gasoline are needed to achieve the 5.99 RVP[5] requirements for gasoline.

4 "Ex-tax" refers to the removing of all California taxes on the price of fuel. This is done to remove any distortions from taxes that may appear in this calculation.
5 "RVP" stands for *Reid vapor pressure*, which is a common measure of the volatility of gasoline.

Figure 5: California Spot CARBOB Price Differential to NYMEX



Source: Energy Information Administration and Oil Price Information Service

Like margins, differentials between traded CARBOB[6] spot pipeline prices and NYMEX[7] RBOB[8] prices can provide information regarding the current disposition of supply and demand for gasoline and diesel in the California market relative to the rest of the nation. A smaller-than-average difference or negative difference would imply that the California market is well supplied. Higher-than-average differences imply inventories are tight, and extremely high differences imply shortages may be occurring.

Gasoline Spot Differentials

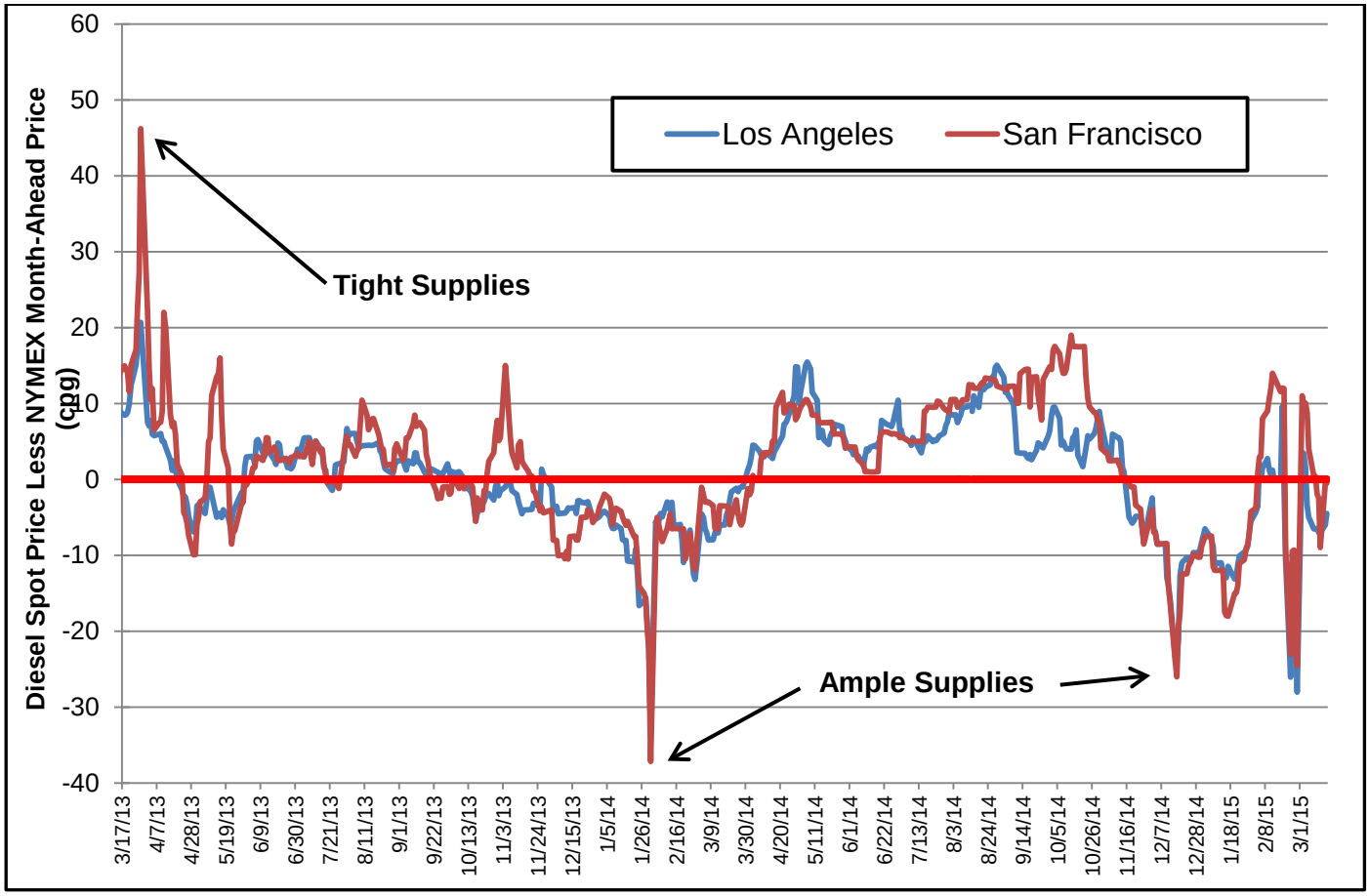
March 2014 vs 2015:
(Absolute Value Change)
- **LA: $0.07 Higher**
- **SF: $0.16 Higher**

February 2015 Average:
(Dollars per Gallon)
- **LA: $0.39**
- **SF: $0.31**

After the February 18, 2015, Torrance refinery incident, the average spot differential for California gasoline rose from $0.38 to a high of $0.85 on February 25. (See Figure 5). This increase represents a tight gasoline market as the refinery accident restricted available gasoline production, lowering the available gasoline on the California market. Because the Torrance refinery is located in Southern California, the Los Angeles differential rose $0.21 higher than the San Francisco differential on February 25. Gasoline differentials have since lowered and on March 17 were $0.06 for Los Angeles and $0.09 for San Francisco.

6 CARBOB stands for *California Reformulated Blendstock for Oxygenate Blending*, and this is the base gasoline that is blended with ethanol to create finished gasoline for dispensing at service stations.
7 NYMEX denotes the *New York Mercantile Exchange.*
8 RBOB is motor gasoline blending components intended for blending with oxygenates to produce finished reformulated motor gasoline meeting federal standards.

Figure 6: California Spot Diesel Price Differential to NYMEX



Source: Energy Information Administration and Oil Price Information Service

Unlike the gasoline market, differentials for diesel remain low and negative (see Figure 6). The 2015 average differential between the daily LA CARB Diesel spot price and NYMEX No. 2 Heating Oil Futures Contract is -$0.06 and the SF CARB Diesel to NYMEX is -$0.04. In 2014, the average LA Diesel to NYMEX differential was $0.01, and the average SF Diesel to NYMEX differential $0.02, which are a $0.07 and $0.06 more than current 2015 averages. While the average March 2015 LA Diesel to NYMEX differential has been -$0.04 and the SF Diesel to NYMEX differential has been $0.03, these values are $0.01 and $0.06 greater than March 2014 averages, respectively.

Diesel Spot Differentials

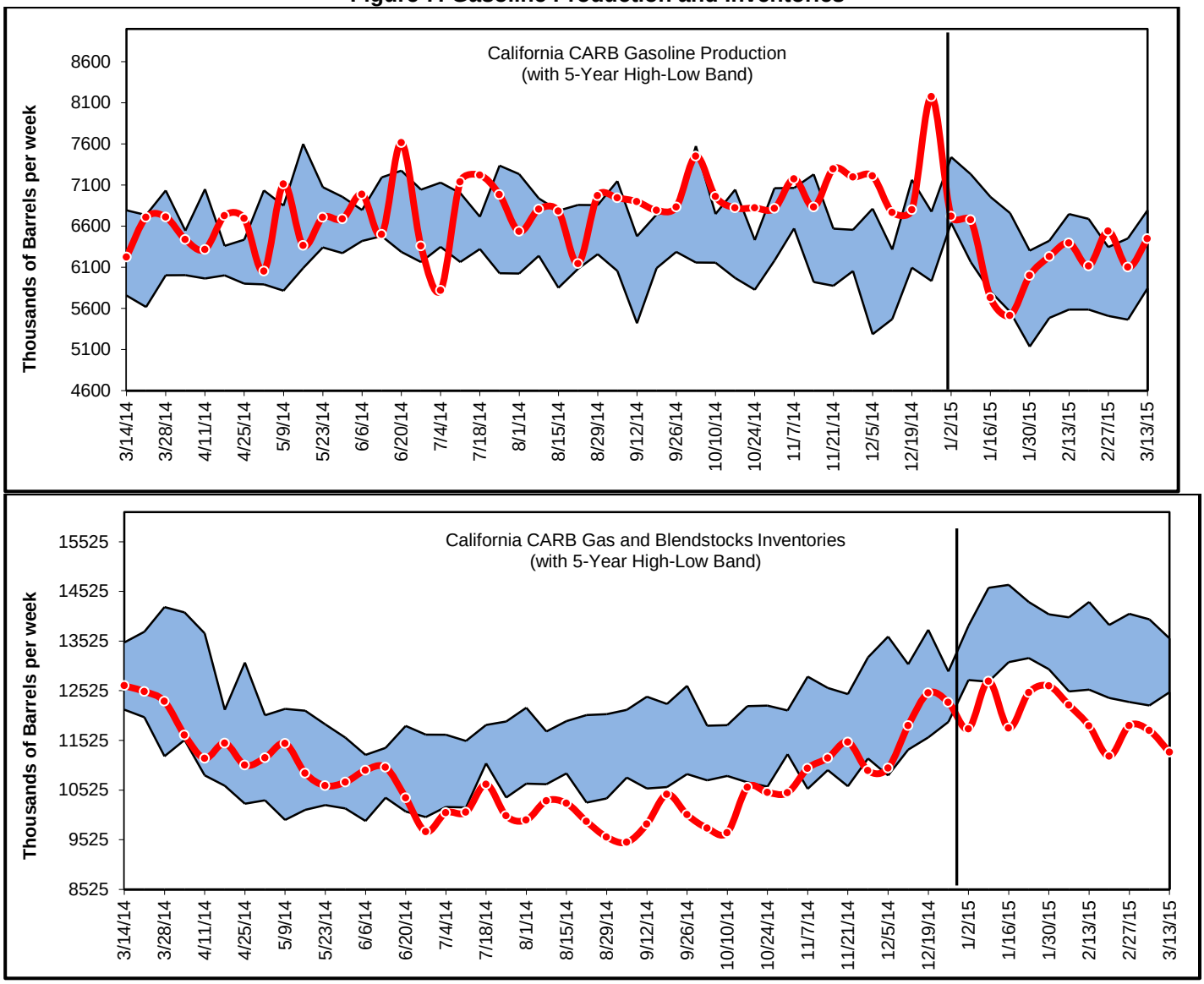
March 2014 vs 2015:
(Absolute Value Change)
- **LA: $0.01 Higher**
- **SF: $0.06 Higher**

February 2015 Average:
(Dollars per Gallon)
- **LA: -$0.05**
- **SF: $0.01**

Since the beginning of February, the SF Diesel to NYMEX differential averaged $0.06 more than the LA Diesel to NYMEX differential. Over the same period, the SF Diesel to NYMEX differential ranged from $0.14 more than the LA Diesel to NYMEX differential to as little as $0.01 more. This tightening in the Northern California diesel market relative to the Southern California market is partly a result of the strike at the Tesoro Golden Eagle refinery.

California Gasoline and Diesel Production and Inventories

Figure 7: Gasoline Production and Inventories

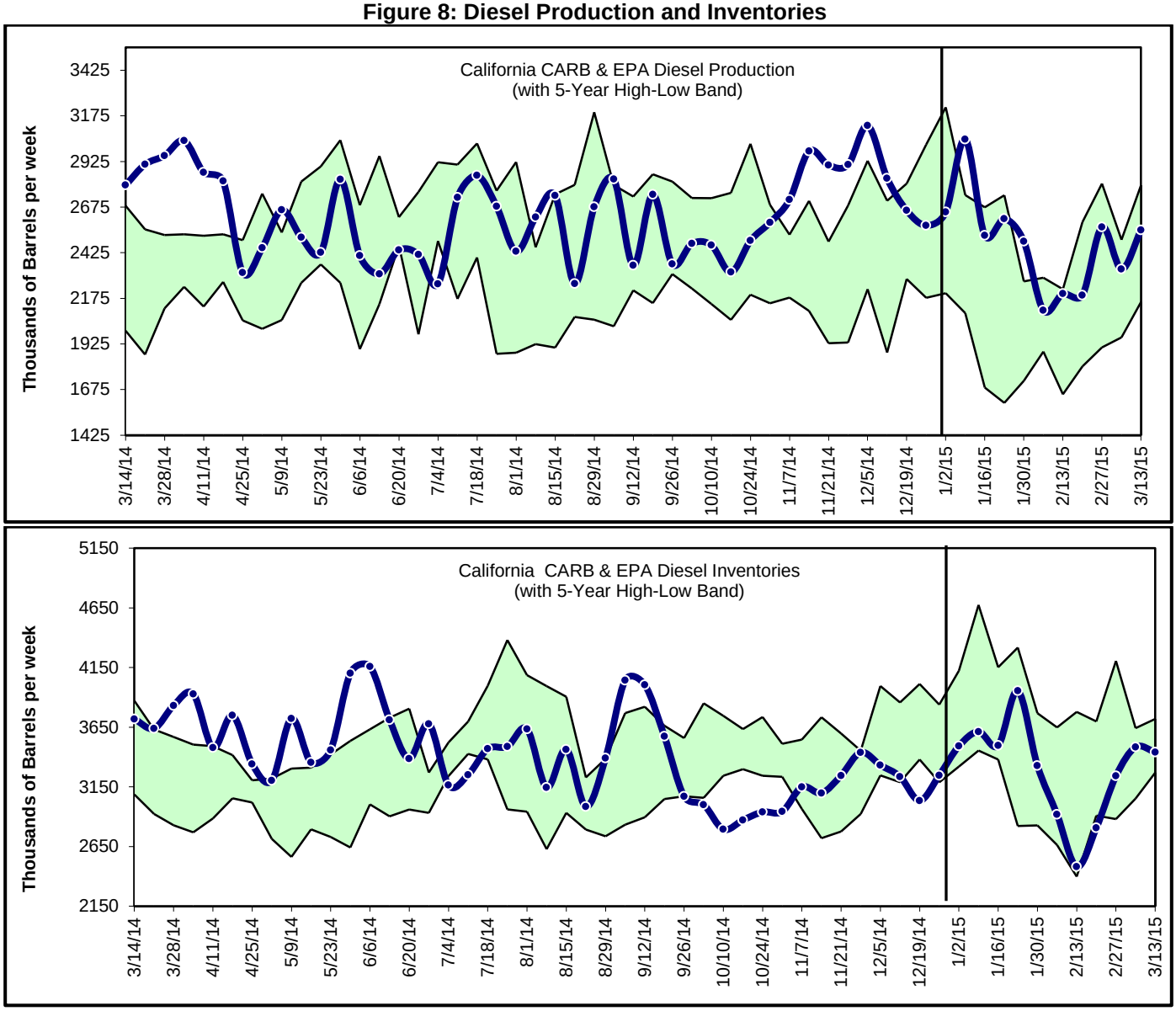


Source: Petroleum Industry Information Reporting Act data

Since the beginning of the year, California inventory amounts for CARB gasoline and blendstocks have been below the 5-year high/low band. For March 2015, inventory amounts fluctuated in the 11.5 million barrels range and represent a decline in inventories when compared to January 2015 totals, which were typically in the 12-million-barrel range.

This decline in inventories is despite seemingly normal production levels of CARB gasoline at the top of the 5-year high/low band. California production of CARB gasoline in March averaged roughly 6.3 million barrels per week, which is similar to the February average. This amount is a slight reduction in production when compared to March 2014 amounts, which averaged closer to 6.6 million barrels per week.

Figure 8: Diesel Production and Inventories



Source: Petroleum Industry Information Reporting Act data

Like gasoline, California inventory amounts for CARB diesel and blendstocks have been on the lower end of the 5-year high/low band in recent months. For March 2015, inventory amounts increased to the 3.5-million-barrel range and are lower when compared to March 2014 inventory levels, which were above 3.65 million barrels. Inventories in February 2015 dropped to as low as 2.5 million barrels but remained within the 5-year high/low band.

Again like gasoline, the decline in diesel inventories occurred despite production toward the top of the 5-year high/low band. California production of CARB diesel in March has averaged roughly 2.4 million barrels per week, which is an increase over amounts averaged in February (2.3 million barrels per week). This is a reduction when compared to March 2014 production amounts, which averaged closer to 2.9 million barrels per week.